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EXAMINER

ALI, MOHAMMAD

ART UNIT	PAPER NUMBER
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2177

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/703,381

Applicant(s)

DUJARI, RAJEEV

Examiner

Mohammad Ali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This communication is responsive to the amendment filed on October 03, 2003.

Information Disclosure Statement

2. The references cited in the IDS, PTO-1449, Paper No. 7 have been considered.
3. Claims 1-36 are pending in this Office Action.

After a further search and a thorough examination of the present application, claims 1-36 remain rejected.

Applicant's arguments with respect to claim 1-36 have been considered, but they are not deemed to be persuasive.

First, Applicants argue that Forecast does not teach, 'providing at least two selected directories for storing files'.

In response to the applicant's arguments, the Examiner respectfully submits in particular, Forecast teaches this limitation as, providing intermediate storage for the data transferred between the channel directors and the disk directors, the cache memory also provides intermediate storage for control information transferred among the channel directors and disk directors, see col. 8, lines 26-30.

Second, Applicants argue that Forecast does not teach, 'automatically balancing files among each of the selected directories'.

In response to the applicant's arguments, the Examiner respectfully submits in particular, Forecast teaches this limitation as, allocation balance is used as a

background process to keep open paths to datasets. The dynamic model automatically creates to collect information about what components are installed in the file server, the resources of the installed components, and connections between the installed components, see col. 67, lines 41-47.

Third, Applicants argue that Forecast does not teach, 'data field update as files are moved among the plurality of directories'.

In response to the applicant's arguments, the Examiner respectfully submits in particular, Forecast teaches this limitation as, a network client requests backup of a new file or data set, the volume manager allocates disk and tape storage to the new file or data set and updates the catalog, see col. 28, lines 47-59 and col. 44, lines 50-52.

Hence applicant's arguments do not distinguish over the prior art of record.

In light of the forgoing arguments, the 102 rejections are hereby sustained.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-36 are rejected under 35 U.S.C. 102(e) as being anticipated by

Forecast et al. ('Forecast' hereinafter), US Patent 6,230,200 B1.

As to claim 1, Forecast discloses a computer-implemented method (Abstract, lines 1-7). Forecast teaches 'providing at least two selected directories for storing files' as providing intermediate storage for the data transferred between the channel directors and the disk directors, the cache memory also provides intermediate storage for control information transferred among the channel directors and disk directors (see col. 8, lines 26-30). Finally, Forecast teaches 'automatically balancing files among each of the selected directories' as allocation balance is used as a background process to keep open paths to datasets. The dynamic model automatically creates to collect information about what components are installed in the file server, the resources of the installed components, and connections between the installed components, (see Abstract, lines 11-18, col. 67, lines 40-47).

As to claim 2, Forecast teaches 'receiving information corresponding to a new file to store' as receive data from the network and store it on disk directory (col. 11, lines 47-48 et seq).

As to claim 3, Forecast teaches 'providing at least two selected directories for storing files includes automatically creating at least one directory' as each node has a list of resources and current directories of the resources. The controller of the file server has a programs for automatically creating dynamic model and balance the file in the directories (Abstract, lines 7-18 et seq).

As to claim 4, Forecast teaches 'automatically balancing files among each of the selected directories includes determining which of the directories has a least number of files therein' as the controller of the file server has a programs for automatically creating dynamic model and balance the file in the directories (col. 2, lines 10-116 et seq).

As to claim 5, Forecast teaches 'automatically balancing files among each of the selected directories includes determining when a selected directory has a number of files stored therein that exceeds a limit' as the scheduler allocates limited resources ('files') in the directories (col. 1, lines 48-49 et seq).

As to claim 6, Forecast teaches 'receiving information corresponding to a new file to store, determining that each selected directory has a number of files therein that exceeds a limit, and automatically creating at least one new selected directory' as the dynamic model can be created automatically by collecting information (col. 67, lines 44-45).

As to claim 7, Forecast teaches 'for each file, tracking which selected directory that file is stored in' as track is staged from the disk array and loaded into the cache slot (col. 20, lines 15-16 et seq).

As to claim 8, Forecast teaches 'maintaining a count of a number of files stored in each selected directory' as the dynamic model is created automatically by collecting ('count') information about the components are installed in the file server (Abstract, lines 20-22).

As to claim 9, Forecast teaches 'at least one of the selected directories caches content downloaded from a server' as the file server includes an array of stream

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servers, at least one control server cached disk array stored as a subsystem (col. 5, lines 48-50 et seq).

As to claim 10, Forecast teaches 'at least one of the selected directories is randomly named' as automatically created directories are named as a random (col. 2, lines 15-17).

As to claim 11, Forecast teaches 'each of the selected directories is randomly named, and wherein each of the selected directories caches content downloaded from a server' as automatically created directories are named as a random (col. 2, lines 6-17).

As to claim 12, Forecast teaches 'maintaining a table including server content references and filenames converted therefrom' as transfer units in a stripe are accessed sequentially by incrementing a transfer index, and indexing a transfer unit mapping table (col. 30, lines 33-35 et seq).

As to claim 13, Forecast teaches 'automatically balancing files among each of the selected directories includes determining a selected directory having a lowest file count, and moving files from another selected directory to the selected directory having the lowest file count' as the controller of the file server has a programs for automatically creating dynamic model and balance the file in the directories (Abstract, lines 11-18, col. 67, lines 40-47).

As to claim 14, Forecast teaches 'maintaining an index including a directory name for each selected directory, and for each directory name, maintaining a file count of a number of files stored therein' as balancing allocations of the resources of data

streams in order to free resources to allocate a path for requested data ('index')
(Abstract, lines 18-20 et seq).

As to claim 15, Forecast teaches 'comparing the number of files in a selected directory having the least number of files therein against a predetermined threshold value, and based on the comparison, generating at least one additional selected directory' as the number is compared to a threshold, which could be a predetermined constant (col. 26, lines 21-34).

As to claim 16, Forecast teaches 'maintaining an indexed directory table including data corresponding to the selected directories therein, and maintaining a table including file information and corresponding file directory information for each file in one of the selected directories' as balancing allocations of the resources of data streams in order to free resources to allocate a path for requested data ('index') (Abstract, lines 18-20 et seq).

As to claim 17, Forecast teaches 'automatically balancing files among each of the selected directories includes moving at least one file from one selected directory to another directory following deletion of at least one other file' as balancing allocations of the resources of data streams in order to free resources to allocate a path for requested data ('index') (Abstract, lines 18-20 et seq).

As to claim 18, Forecast teaches 'maintaining a file count of a number of files stored in each selected directory, and wherein automatically balancing files among each of the selected directories includes moving at least one file out of a selected directory when the file count maintained therefor is below a threshold value' as the controller of

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the file server has a programs for automatically creating dynamic model and balance the file in the directories (Abstract, lines 11-18, col. 67, lines 40-47).

As to claim 19, Forecast teaches 'removing a selected directory based on the file count maintained therefor' as cache directory in the cache memory is inspected to determine whether cache is in the cache memory. If not then a cache slot is allocated to receive the track by removing the cache slot from the head (col. 20, lines 8-15 et seq).

As to claim 20, Forecast discloses in a computing device having a file system (Abstract, lines 1-7). Forecast teaches 'a balancing mechanism configured to automatically create a selected directory in the file system for storing files, and further configured to distribute files from at least one other directory in the file system to the selected directory' as each node has a list of resources and current allocations ('directories') of the resources (Abstract, lines 7-8, Figs. 28, 49). Finally, Forecast teaches 'a data structure, the data structure maintained by the balancing mechanism to track information on the files in the selected directory' as the controller of the file server has a programs for automatically creating dynamic model and balance the file in the directories (Abstract, lines 11-18, col. 67, lines 40-47, Figs. 28, 49).

As to claim 21, Forecast teaches 'the at least one other directory comprises a directory created by the balancing mechanism' as each node has a list of resources and current directories of the resources. The controller of the file server has a program for automatically creating dynamic model and balance the file in the directories (Abstract, lines 7-18 et seq).

As to claim 22, Forecast teaches 'the balancing mechanism receives information corresponding to a new file to store' as each node has a list of resources and current directories of the resources. The controller of the file server has a program for automatically creating dynamic model and balance the file in the directories (Abstract, lines 7-18 et seq).

As to claim 23, Forecast teaches 'the balancing mechanism distributes the files based on a number of files in the at least one other directory' as the dynamic model can be created automatically by collecting information (col. 67, lines 44-45 et seq).

As to claim 24, Forecast teaches 'the balancing mechanism creates an additional directory for distributing files thereto' as the dynamic model can be created automatically by collecting information (col. 67, lines 44-45 et seq).

As to claim 25, Forecast teaches 'the balancing mechanism receives information corresponding to a files to store, and distributes those files based on a file count of the selected directory and the additional directory' as the dynamic model is created automatically by collecting ('count) information about the components are installed in the file server (Abstract, lines 20-22).

As to claim 26, Forecast teaches 'a table having information therein indicating which directory each file is stored in' as transfer units in a stripe are accessed sequentially by incrementing a transfer index, and indexing a transfer unit mapping table (col. 30, lines 33-35 et seq).

As to claim 27, Forecast teaches 'the balancing mechanism is configured to create the additional directory upon a determination that the selected directory has a

number of files stored therein that exceeds a limit' as the scheduler allocates limited resources ('files') in the directories (col. 1, lines 48-49 et seq).

As to claim 28, Forecast teaches 'the data structure includes a count of a number of files stored in each selected directory' as the dynamic model is created automatically by collecting ('count') information about the components are installed in the file server (Abstract, lines 20-22).

As to claim 29, Forecast teaches 'the selected directory caches content downloaded from a server' as the file server includes an array of stream servers, at least one control server cached disk array stored as a subsystem (col. 5, lines 48-50 et seq).

As to claim 30, Forecast teaches 'the selected directory is randomly named' as automatically created directories are named as a random (col. 2, lines 15-17).

As to claim 31, Forecast teaches 'the selected directory is randomly named, and wherein the selected directory caches content downloaded from a server' as automatically created directories are named as a random (col. 2, lines 6-17 et seq).

As to claim 32, Forecast teaches 'the data structure includes a directory name for the selected directory and a file count of a number of files stored in the selected directory' as balancing allocations of the resources of data streams in order to free resources to allocate a path for requested data ('index') (Abstract, lines 18-20 et seq).

As to claim 33, Forecast teaches 'the balancing mechanism is further configured to move at least one file from one selected directory to another selected directory in response to deletion of at least one other file' as balancing allocations of the resources

of data streams in order to free resources to allocate a path for requested data ('index') (Abstract, lines 18-20 et seq).

As to claim 34, Forecast teaches 'the data structure tracks a file count of a number of files stored in each selected directory, and wherein the balancing mechanism is further configured to move at least one file out of a selected directory when the file count maintained therefor is below a threshold value' as the controller of the file server has a programs for automatically creating dynamic model and balance the file in the directories (Abstract, lines 11-18, col. 67, lines 40-47).

As to claim 35, Forecast teaches 'the balancing mechanism removes a selected directory based on the file count maintained therefor' as cache directory in the cache memory is inspected to determine whether cache is in the cache memory. If not then a cache slot is allocated to receive the track by removing the cache slot from the head (col. 20, lines 8-15 et seq).

As to claim 36, Forecast discloses a computer-readable medium having stored thereon a data structure (col. 34, lines 10-19). Forecast teaches 'a first field identifying one of a plurality of directories' as each node has a list of resources and current allocations ('directories') of the resources (Abstract, lines 7-8, Figs. 28, 49). Finally Forecast teaches 'a second data field including data corresponding to a number of files stored in the directory identified in the first data field, the second data field updated as files are moved among the plurality of directories' as the controller of the file server has a programs for automatically creating dynamic model and balance the file in the directories (Abstract, lines 11-18, col. 67, lines 40-47, Figs. 28, 49).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad Ali whose telephone number is (703) 605-4356. The examiner can normally be reached on Monday to Thursday from 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (703) 305-9790 or Customer Service (703) 306-5631. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for any communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

Mohammad Ali
Patent Examiner
AU 2177

MA

December 03, 2003


JEAN R. HOMERE
PRIMARY EXAMINER